Region 1 FY 2012 Invasive Species Control Program Proposal

Refuge name: Hart Mountain National Antelope Refuge

Project title: Protecting high value shrub-steppe habitat on the Hart Mountain National Antelope Refuge

Project description:

Cheatgrass (*Bromus tectorum*) is an aggressive invasive annual grass that is widespread throughout the Great Basin landscape. As an invasive it exhibits an explosive ability for pioneering disturbed soils and also for rapid expansion in burned areas resulting in the long term loss of valuable naturally occuring wildlife habitat. Most large upland areas dominated by cheatgrass exhibit poor recovery abilities thus requiring intensive and expensive rehabilitation to restore native vegetation. Loss of shrub-steppe on the Refuge would cause a significant negative impact to core habitat for sage grouse, pronghorn, and other sage brush and grassland steppe obligate wildlife species. Preventing the expansion of cheatgrass on the Refuge is paramount to protecting the quality and function of shrub-steppe habitat and the wildlife it supports.

Cheatgrass is present on the Refuge in developed areas subjected to soil disturbance, in lower elevation shrub-steppe areas along the Hart Mountain escarpment, and, to a lesser extent, in some higher elevation shrub-steppe areas that had been heavily grazed by livestock and then received treatment with prescribed fire. Developed areas of the Refuge include roadsides, campgrounds, and corrals. The primary source of soil disturbance in the shrub-steppe was eliminated nearly 20 years ago, thus, the potential for spread of cheatgrass is reduced in the absence of fire. However, shrub-steppe habitat adjacent to developed areas, such as roadsides and campgrounds, is at risk of cheatgrass expansion and dominance in the event of a wildland fire. The goal of this project is to safeguard these high risk shrub-steppe areas through a multi-year multi-phase treatment program that aggressively targets cheatgrass present on the disturbed sites of the Refuge.

The full extent of cheatgrass infestation on the Refuge has not been inventoried and total acres infested has not been quantified. Known infestations exist along 46 miles of primary roads, along over 100 miles of secondary roads, on over 2,400 acres in the foothills along the Hart Mountain escarpment, and on approximately 30 acres in campgrounds. The initial multi-phase priority treatment areas will include the primary roads and campgrounds. It is estimated that infested primary roadsides amount to approximately 112 acres (includes both sides of the roads) for a total initial priority treatment target area of 142 acres. Funds will be used to contract an herbicide applicator and to purchase herbicides and large capacity application equipment.

Based on experimental cheatgrass treatment work conducted in 2011, we propose to apply herbicides as a pre-emergent application in fall 2012 and as a post-emergent application in spring 2013. Effectiveness monitoring conducted during summer 2013 will identify areas in need of a second pre-emergent treatment which will be applied in fall 2013 to provide follow-up treatment. Campgrounds will be reseeded in fall 2013 to reduce the potential for cheatgrass re-infestation. Due to the frequency of disturbance along primary roadsides, monitoring will be conducted annually to determine the subsequent need for re-treatment.

Potential for eradication:

Although it is widely recognized that cheatgrass will never be eradicated fully, a treatment program that aggressively targets infested areas subject to continued disturbance (i.e. roadsides and campgrounds)

will successfully limit its expansion into adjacent non-infested shrub-steppe areas. Additionally, removing the potential for the spread of cheatgrass through aggressive treatment will reduce the risk of negative impacts to wildlife habitat from wildfire as well as reduce the potential for the cheatgrass-fire cycle to become established as it has in many areas of the Great Basin.

How the project supports achieving the refuge purpose:
This project would support four of five high priority goals established in the Hart Mountain NAR Comprehensive Management Plan (1994). Healthy populations of pronghorn and greater sage-grouse (a candidate species for Endangered Species Act Protection) rely on the structure, species composition, and native ecological communities of the Great Basin. Wildlife dependent recreation requires natural landscapes that support healthy diverse populations of native wildlife. Cheatgrass directly alters ecological communities and decreases habitat quality for focal species of Hart Mountain NAR.

How the project supports biological integrity:
This project will help protect the process and function of natural systems in native high desert shrub-steppe habitat characteristic of the Great Basin and the wildlife it supports. Native plant species are key to proper ecosystem function, especially in fragile landscapes such as the Great Basin where degraded areas take decades for positive restoration to occur. Reducing the presence of cheatgrass will benefit native plant species by reducing competition thereby allowing native species to maintain dominance. In the face of climate change, rehabilitation implemented now on areas degraded by cheatgrass will preserve future populations of native plants and wildlife.

Support from partners:
We receive support from several partners in our overall efforts to manage invasive plants on the Refuge. Partners include Friends of Hart Mountain NAR, Order Of The Antelope, Oregon Hunters Association, Oregon Department of Agriculture, and the Lake County Cooperative Weed Management Area. These partners have already committed fully to other components of the Refuge invasive plant management program and therefore, will not be directly involved with initial treatment of cheatgrass.

Monitoring that will be used to evaluate the project:
Monitoring must and will be conducted annually to fully safeguard shrub-steppe areas located adjacent to disturbed sites identified for priority treatment. Photo-points will be established at each distinct treatment site to provide sufficient documentation of pre-treatment conditions and post-treatment results throughout each of the sites. Photo-points will be monitored annually until 90 percent of the site is free of cheatgrass. Ocular monitoring of sites subject to disturbance will be conducted annually to determine the need for re-treatment.

Requested Funding:

Project Element	Funding Requested
Applicator Contractor	$5,000
Herbicide (Imazapic, Glyphosate)	$6,200
Skid-mounted Spray System	$6,500
Total	**$17,700**